

Work Order ID 136247

136247

Page 1

Friday, August 28, 2015 2:22:52 PM

Item ID: D2933-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Saddle LH In, 206
 Start Date: 8/28/2015 Start Qty: 6.00 *6* Cust Item ID:
 Required Date: 8/28/2015 Req'd Qty: 6.00 *6* Customer:
 Reference:

Approvals: Process Plan: SH/LL Date: 20150901 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2933	Rev C								

100	HAAS CNC VERTICAL MACHINING #1	0.00				6	Ø		DAS 20 9-89 15-09-17
100									
HAAS 1	Memo	0.08							
HAAS CNC vertical machine #1	Program part number and batch number.1-Inspect part number and batch number are programmed correctly.2-Machine Step No 1 of Folio and visually inspect as per dwg D2933 & attached Dimension Sheet 3-Machine Step No 2 of Folio and visually inspect as per								
110	CONVENTIONAL MILLING MACHINE	0.00				6	Ø		DAS 20 9-89 15-09-17
110									
Mill Conv	Memo	0.01							
Conventional Milling Machine	Machine Keyway and inspect per attached dimension sheet								
120	QC1- Inspection performed by CMM	0.00							DAS 14 9-89
120						6	Ø		
QC	Memo	0.00							
Quality Control	15/09/17								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 136247

136247

Page 2

Friday, August 28, 2015 2:22:52 PM

Item ID: D2933-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Saddle LH In, 206
 Start Date: 8/28/2015 Start Qty: 6.00 ***6*** Cust Item ID:
 Required Date: 8/28/2015 Req'd Qty: 6.00 ***6*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							
130						6	0		JPL 2015-09-17
QC	Memo	0.00							
Quality Control									
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140						6	0	15-9-22	DBL
HandFinish	Memo	0.01							
Hand Finishing									
150	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
150						6	0	15-9-28	DBL
Powdercoat	Memo	0.00							
Powder Coating									
	START TIME: 1:40 OVEN TEMPERATURE: 270								
	FINISH TIME: 2:10								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 136247

Friday, August 28, 2015 2:22:52 PM

136247

Page 3

Item ID: D2933-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Saddle LH In, 206

Start Date: 8/28/2015 Start Qty: 6.00

6

Cust Item ID:

Required Date: 8/28/2015 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC3- Inspect Part Finish

0.00

160

QC

Memo

0.00

Quality Control

DAS
38
9-89
SEP 24 2015

170

Identify as per dwg & Stock Location: SL396

0.00

170

Packaging

Memo

0.00

Packaging

DAS
27
8-89
SEP 24 2015

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.01

Quality Control

ML5 SEP 24 2015

SH 20150924

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
		OTHER : ☐							

Picklist Print

Friday, August 28, 2015 1:53:04 PM

Page 1

Work Order ID: 136247

136247

Parent Item: D2933-1

D2933-1

Parent Item Name: Saddle LH In, 206

Start Date: 8/28/2015

Required Date: 8/28/2015

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP: B00.06.26New DWG rev (mpp 2069)EC
IPP Rev:C As per Rev C 07-03-19 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-001/ *D6101-001* Saddle Billet		Manufactured	No			100	Each	36.0000	1	6		DAS 20 9-89	15-09-15
						<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>					
						MAT042	36						
						129986	2						
						(132708)	34						

DQA: _____ Date: _____

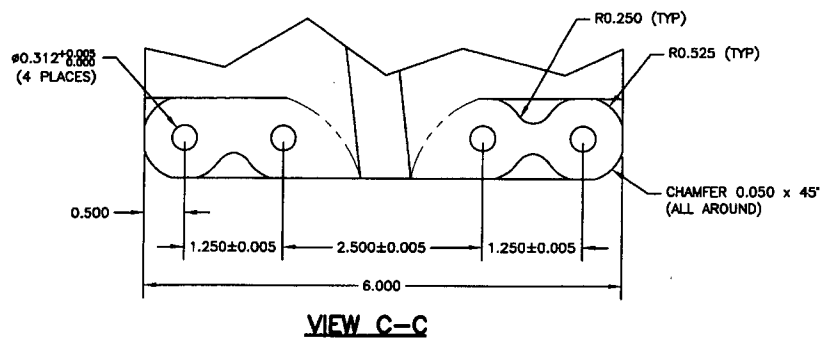


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

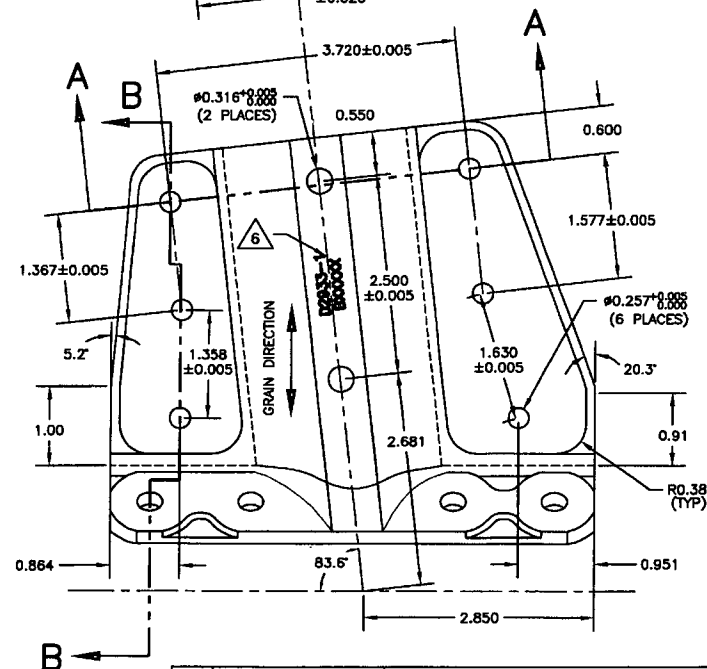
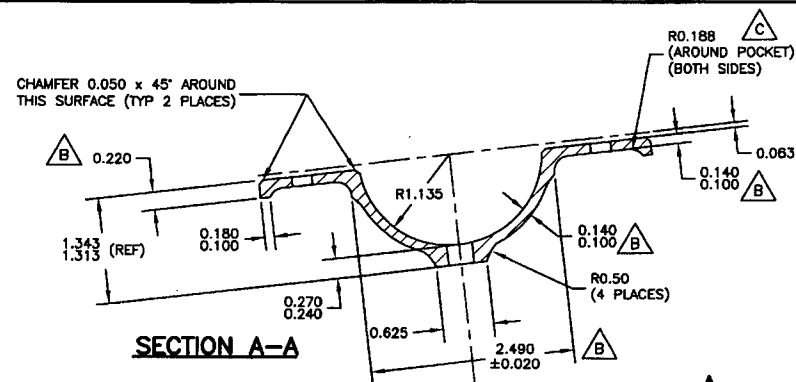
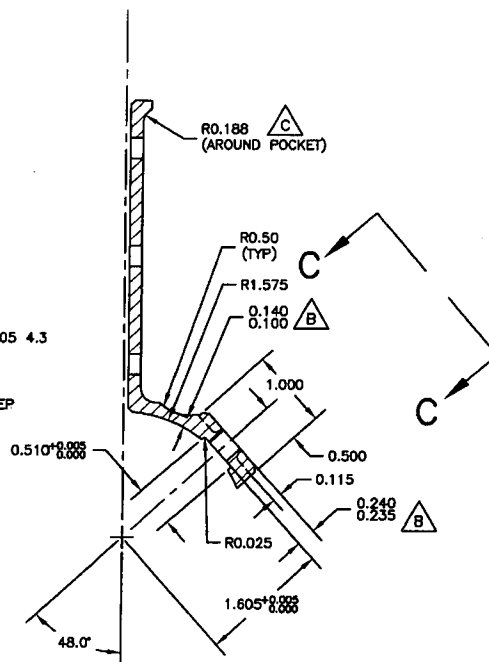
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																																													
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval																																																																											
Description Work Order Deviation			Disposition																																																																												
			Completed By																																																																												
			Lead hand / Supervisor Approval Verification																																																																												
			QC / QA Coordinator Approval																																																																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left;">Root Cause</th> <th colspan="3" style="text-align: left;">FAULT CATEGORY</th> </tr> </thead> <tbody> <tr> <td style="width: 15%;">Environment ☐</td> <td style="width: 15%;">No Re-verification ☐</td> <td style="width: 15%;">Pressure/Forced ☐</td> <td style="width: 15%;">Temperature/Cure ☐</td> <td style="width: 15%;">Power Loss/Surge ☐</td> <td style="width: 15%;">Positioned Wrong ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> <td>Bending ☐</td> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>Outside Dimensions ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>Over/Under tolerance ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> <td>Cracks ☐</td> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>Part Incorrect ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>Part Lost/Missing ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> <td>Cuffs ☐</td> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>Part Moved ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> <td>Crushing ☐</td> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>Drawing ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>Finish ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>Misread ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> <td>Misaligned/off center ☐</td> <td>Turning Sequence ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> <td colspan="4" rowspan="2" style="vertical-align: top;">OTHER : _____</td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> </tr> </tbody> </table>						Root Cause			FAULT CATEGORY			Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____				Misidentified ☐	Past Due ☐
Root Cause			FAULT CATEGORY																																																																												
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																																																																										
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																																																																										
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																																																																										
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																																																																										
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																																																																										
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																																																																										
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																																																																										
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																																																																										
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																																																																										
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																																																																										
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																																																																													
Misidentified ☐	Past Due ☐																																																																														



D2933-1 LH SADDLE (SHOWN)
D2933-2 RH SADDLE (OPPOSITE)

- NOTES:**
- 1) MATERIAL: ALUMINUM 7075-T7351 (QQ-A-250/12)
 (MAKE FROM D6101-001 SADDLE BILLET, 7075)
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 POWDER COAT GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
 - 3) BREAK ALL SHARP EDGES 0.010 TO 0.020
 - 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
 - 5) ALL DIMENSIONS ARE IN INCHES
 - 6) ENGRAVE PART AND BATCH NUMBER IN THIS AREA 0.010 TO 0.015 DEEP



C	06.11.09	R0.188 WAS R0.30 TO R0.25
B	00.05.29	CHANGED GEOMETRY AND MATERIAL
A	99.10.29	NEW ISSUE
DESIGN	DRAWN BY	
CHECKED	APPROVED	DART DART AEROSPACE USA, INC. BELLEVUE, WA
DATE	TITLE	REV. C
06.11.09	SADDLE INSIDE	D2933
		SHEET 1 OF 1
		SCALE
		2:3

COPYRIGHT © 1999 BY DART AEROSPACE USA, INC.
 THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL
 AND IS SUPPLIED ON THE EXPRESS CONDITION
 THAT IT IS NOT TO BE USED FOR ANY PURPOSE
 OR COPIED OR COMMUNICATED TO ANY OTHER
 PERSON WITHOUT WRITTEN PERMISSION FROM
 DART AEROSPACE USA, INC.

20150901
 136247
 SK

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
☐ OTHER : _____					

DART AEROSPACE LTD		Work Order: 136247
Description: 206 Saddle, Inboard, Left side		Part Number: D2933-1
Inspection Dwg: D2933	Rev: C	DSK: Rev: Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				1	2	3	4	5
A	0.100	0.140		.124	.125	.124	.124	.125
B	0.100	0.140		.124	.125	.124	.125	.122
C	0.100	0.140		.114	.114	.114	.114	.113
D	0.210	0.230		.220	.220	.220	.220	.220
E	1.245	1.255		1.250	1.250	1.250	1.250	1.250
F	1.245	1.255		1.250	1.250	1.250	1.250	1.250
G	2.495	2.505		2.500	2.500	2.500	2.500	2.500
H	0.510	0.515		.512	.512	.512	.512	.512
I	1.572	1.582		1.577	1.577	1.577	1.577	1.577
J	2.495	2.505		2.500	2.500	2.500	2.500	2.500
K	0.257	0.262		.258	.258	.258	.258	.258
L	0.312	0.317		.313	.313	.313	.313	.313
M	0.235	0.240		.237	.236	.236	.237	.236
N	0.100	0.140		.119	.119	.119	.119	.119
O	0.540	0.560		.546	.546	.546	.546	.544
P	0.490	0.510		.497	.497	.496	.495	.496
Q	3.715	3.725		3.720	3.720	3.720	3.720	3.720
R	2.470	2.510		2.490	2.490	2.490	2.490	2.490
S	0.240	0.270		.252	.250	.247	.248	.247
T	0.100	0.180		.135	.135	.135	.135	.135
U	1.625	1.635		1.630	1.630	1.630	1.630	1.630
V	1.362	1.372		1.367	1.367	1.367	1.367	1.367
W	0.316	0.321		.316	.316	.316	.316	.316
X	1.125	1.145		1.1346	1.135	1.1348	1.1348	1.1358
Y	1.565	1.585		1.5736	1.575	1.5738	1.574	1.5747
Z	0.178	0.198		.188	.188	.188	.188	.188
AA								
AB								
AC								
AD								
AE								

DAS Accept/Reject

Measured by: 20 9-89	Date: 15-09-16
Audited by: JFC	Date:
Prototype Approval: 2015-09-17 N/A	Date: N/A

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.12.12	Re-format; Added Dim. X-Y, DT8683, DT8686, DT8690 & DT8695 A/B	KJ/RF	
C	06.10.03	Removed DT8683, DT8686 & DT8690	KJ/JLM	
D	07.03.21	Revised per drawing revision C	KJ/JLM	
E	08.01.16	DT8695 A/B removed from dimension Y	KJ/EC/DD	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition			Completed By																		
							Lead hand / Supervisor Approval Verification																		
							QC / QA Coordinator Approval																		
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

DART AEROSPACE LTD		Work Order: 136277
Description: 206 Saddle, Inboard, Left side		Part Number: D2933-1
Inspection Dwg: D2933 Rev: C DSK: Rev:		Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				1	2	3	4	5
A	0.100	0.140		.123				
B	0.100	0.140		.124				
C	0.100	0.140		.114				
D	0.210	0.230		.221				
E	1.245	1.255		1.250				
F	1.245	1.255		1.250				
G	2.495	2.505		2.500				
H	0.510	0.515		.512				
I	1.572	1.582		1.577				
J	2.495	2.505		2.500				
K	0.257	0.262		.258				
L	0.312	0.317		.313				
M	0.235	0.240		.237				
N	0.100	0.140		.120				
O	0.540	0.560		.545				
P	0.490	0.510		.496				
Q	3.715	3.725		3.720				
R	2.470	2.510		2.490				
S	0.240	0.270		.249				
T	0.100	0.180		.135				
U	1.625	1.635		1.630				
V	1.362	1.372		1.367				
W	0.316	0.321		.316				
X	1.125	1.145		1.1367				
Y	1.565	1.585		1.575				
Z	0.178	0.198		.188				
AA								
AB								
AC								
AD								
AE								
DAS Accept/Reject								

Measured by: 29 989	Date: 15-09-16
Audited by: JFC	Date:
Prototype Approval: 2015-09-17 N/A	Date: N/A

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.12.12	Re-format; Added Dim. X-Y, DT8683, DT8686, DT8690 & DT8695 A/B	KJ/RF	
C	06.10.03	Removed DT8683, DT8686 & DT8690	KJ/JLM	
D	07.03.21	Revised per drawing revision C	KJ/JLM	
E	08.01.16	DT8695 A/B removed from dimension Y	KJ/EC/DD	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



Part Number: D2933-1	Rev: C	- Page 1 -
Description: SADDLE INSIDE	Inspection Dwg: D2933	Work Order: 136247

Item Ref.	Nominal	Tolerance	No. Piece_1 Actual	No. Piece_2 Actual	No. Piece_3 Actual	No. Piece_4 Actual	
1	0.3120	+0.0050/0.0000	0.3121	0.3120	0.3120	0.3120	
2	0.5000	+0.0100/-0.0100	0.4990	0.5012	0.4985	0.4979	
3	1.2500	+0.0050/-0.0050	1.2491	1.2499	1.2500	1.2505	
4	2.5000	+0.0050/-0.0050	2.4991	2.5003	2.4991	2.4991	
5	6.0000	+0.0100/-0.0100	5.9988	5.9983	5.9985	5.9985	
6	1.2500	+0.0050/-0.0050	1.2504	1.2484	1.2495	1.2496	
D7	0.050	+0.010/-0.010	0.040	0.040	0.040	0.040	
8	0.2200	+0.0100/-0.0100	0.2205	0.2209	0.2204	0.2213	
D9	0.050	+0.010/-0.010	0.052	0.053	0.052	0.053	
D10	0.120	+0.020/-0.020	0.124	0.124	0.125	0.124	
11	1.1350	+0.0100/-0.0100	1.1330	1.1327	1.1330	1.1331	
12	0.0630	+0.0100/-0.0100	0.0601	0.0590	0.0599	0.0600	
13	0.1200	+0.0200/-0.0200	0.1206	0.1217	0.1212	0.1208	
D14	0.120	+0.020/-0.020	0.125	0.125	0.124	0.124	
D15	2.490	+0.020/-0.020	2.490	2.490	2.490	2.490	
D16	0.625	+0.010/-0.010	0.635	0.635	0.635	0.635	
D17	0.255	+0.015/-0.015	0.249	0.246	0.247	0.247	
D18	0.140	+0.040/-0.040	0.140	0.126	0.128	0.128	
19	1.3280	+0.0150/-0.0150	1.3234	1.3239	1.3233	1.3237	
20	3.7200	+0.0050/-0.0050	3.7169	3.7181	3.7185	3.7178	
21	0.5500	+0.0100/-0.0100	0.5505	0.5501	0.5507	0.5503	
22	0.6000	+0.0100/-0.0100	0.5994	0.5999	0.6002	0.6003	
23	1.5770	+0.0050/-0.0050	1.5783	1.5781	1.5794	1.5796	
24	0.2570	+0.0050/0.0000	0.2577	0.2576	0.2573	0.2570	
25	2.5000	+0.0050/-0.0050	2.4992	2.5003	2.4987	2.4993	
26	1.6300	+0.0050/-0.0050	1.6302	1.6305	1.6298	1.6296	
27	20.3000	+0.5000/-0.5000	20.2657	20.3137	20.2824	20.3087	
28	0.9510	+0.0100/-0.0100	0.9518	0.9508	0.9514	0.9515	
29	2.8500	+0.0100/-0.0100	2.8500	2.8484	2.8496	2.8485	
30	83.6000	+0.5000/-0.5000	83.5662	83.5655	83.5705	83.5657	
31	2.6810	+0.0100/-0.0100	2.6840	2.6828	2.6843	2.6841	

Measured by:
Mathieu Lamarche

Date:
2015-9-17

Audited by:
JFC

Date:
2015-9-17



Part Number: D2933-1	Rev: C	- Page 2 -
Description: SADDLE INSIDE	Inspection Dwg: D2933	Work Order: 136247

Item Ref.	Nominal	Tolerance	No. Piece_1 Actual	No. Piece_2 Actual	No. Piece_3 Actual	No. Piece_4 Actual	
32	0.8640	+0.0100/-0.0100	0.8637	0.8656	0.8642	0.8643	
33	1.3580	+0.0050/-0.0050	1.3594	1.3592	1.3597	1.3581	
34	5.2000	+0.5000/-0.5000	5.2549	5.2529	5.2780	5.2561	
35	1.3670	+0.0050/-0.0050	1.3681	1.3679	1.3672	1.3670	
36	0.3160	+0.0050/0.0000	0.3160	0.3160	0.3160	0.3160	
D37	0.188	+0.010/-0.010	0.188	0.188	0.188	0.188	
38	1.5750	+0.0100/-0.0100	1.5769	1.5764	1.5771	1.5770	
D39	0.120	+0.020/-0.020	0.124	0.125	0.122	0.123	
D40	1.000	+0.010/-0.010	1.004	1.005	1.003	1.004	
41	0.5000	+0.0100/-0.0100	0.4964	0.4970	0.4964	0.4969	
42	0.1150	+0.0100/-0.0100	0.1156	0.1135	0.1129	0.1107	
D43	0.235	+0.005/0.000	0.239	0.239	0.239	0.239	
44	1.6050	+0.0050/0.0000	1.6100	1.6100	1.6100	1.6100	
Ang45	48.000	+0.500/-0.500	48.104	48.080	48.098	48.075	
D46	0.510	+0.005/0.000	0.512	0.512	0.512	0.512	
47	0.0630	+0.0100/-0.0100	0.0658	0.0653	0.0656	0.0653	

Measured by:
Mathieu Lamarche

Date:
2015-9-17

Audited by:
Jfe

Date:
2015-9-17



Part Number: D2933-1	Rev: C	- Page 1 -
Description: SADDLE INSIDE	Inspection Dwg: D2933	Work Order: 136247

Item Ref.	Nominal	Tolerance	No. Piece_5 Actual	No. Piece_6 Actual			
1	0.3120	+0.0050/0.0000	0.3122	0.3120			
2	0.5000	+0.0100/-0.0100	0.4978	0.4998			
3	1.2500	+0.0050/-0.0050	1.2506	1.2496			
4	2.5000	+0.0050/-0.0050	2.4992	2.4994			
5	6.0000	+0.0100/-0.0100	5.9986	5.9993			
6	1.2500	+0.0050/-0.0050	1.2496	1.2500			
D7	0.050	+0.010/-0.010	0.040	0.040			
8	0.2200	+0.0100/-0.0100	0.2211	0.2213			
D9	0.050	+0.010/-0.010	0.052	0.053			
D10	0.120	+0.020/-0.020	0.125	0.125			
11	1.1350	+0.0100/-0.0100	1.1330	1.1329			
12	0.0630	+0.0100/-0.0100	0.0593	0.0585			
13	0.1200	+0.0200/-0.0200	0.1212	0.1209			
D14	0.120	+0.020/-0.020	0.124	0.125			
D15	2.490	+0.020/-0.020	2.490	2.490			
D16	0.625	+0.010/-0.010	0.635	0.635			
D17	0.255	+0.015/-0.015	0.246	0.246			
D18	0.140	+0.040/-0.040	0.128	0.128			
19	1.3280	+0.0150/-0.0150	1.3238	1.3238			
20	3.7200	+0.0050/-0.0050	3.7179	3.7178			
21	0.5500	+0.0100/-0.0100	0.5493	0.5490			
22	0.6000	+0.0100/-0.0100	0.5990	0.5982			
23	1.5770	+0.0050/-0.0050	1.5786	1.5793			
24	0.2570	+0.0050/0.0000	0.2573	0.2570			
25	2.5000	+0.0050/-0.0050	2.4994	2.4994			
26	1.6300	+0.0050/-0.0050	1.6300	1.6292			
27	20.3000	+0.5000/-0.5000	20.2878	20.2727			
28	0.9510	+0.0100/-0.0100	0.9526	0.9508			
29	2.8500	+0.0100/-0.0100	2.8494	2.8501			
30	83.6000	+0.5000/-0.5000	83.5644	83.5630			
31	2.6810	+0.0100/-0.0100	2.6847	2.6846			

Measured by:
Mathieu Lamarche

Date:
2015-9-17

Audited by:
Jfe

Date:
2015-9-17



Part Number: D2933-1	Rev: C	- Page 2 -
Description: SADDLE INSIDE	Inspection Dwg: D2933	Work Order: 136247

Item Ref.	Nominal	Tolerance	No. Piece_5 Actual	No. Piece_6 Actual			
32	0.8640	+0.0100/-0.0100	0.8639	0.8646			
33	1.3580	+0.0050/-0.0050	1.3587	1.3611			
34	5.2000	+0.5000/-0.5000	5.2777	5.2311			
35	1.3670	+0.0050/-0.0050	1.3679	1.3647			
36	0.3160	+0.0050/0.0000	0.3160	0.3160			
D37	0.188	+0.010/-0.010	0.188	0.188			
38	1.5750	+0.0100/-0.0100	1.5768	1.5765			
D39	0.120	+0.020/-0.020	0.124	0.124			
D40	1.000	+0.010/-0.010	1.004	1.004			
41	0.5000	+0.0100/-0.0100	0.4964	0.4964			
42	0.1150	+0.0100/-0.0100	0.1139	0.1108			
D43	0.235	+0.005/0.000	0.238	0.238			
44	1.6050	+0.0050/0.0000	1.6100	1.6100			
Ang45	48.000	+0.500/-0.500	48.091	48.085			
D46	0.510	+0.005/0.000	0.512	0.512			
47	0.0630	+0.0100/-0.0100	0.0653	0.0642			

Measured by:
Mathieu Lamarche

Date:
2015-9-17

Audited by:
JFC

Date:
2015-9-17